

WHAT IS CLAIMED IS:

1. A nitride compound semiconductor light emitting device comprising:

a GaN substrate having a crystal orientation which is tilted away from a <0001> direction by an angle which is equal to or greater than about 0.05° and which is equal to or less than about 2°, and

a semiconductor multilayer structure formed on the GaN substrate,

wherein the semiconductor multilayer structure includes:

an acceptor doping layer containing a nitride compound semiconductor; and

an active layer including a light emitting region.

2. A nitride compound semiconductor light emitting device according to claim 1, wherein the acceptor doping layer comprises $\text{Ga}_x\text{In}_y\text{Al}_{1-(x+y)}\text{N}$ (where $0 \leq x \leq 1$; $0 \leq y \leq 1$; and $0 \leq x+y \leq 1$).

3. A nitride compound semiconductor light emitting device according to claim 1, wherein the GaN substrate has a crystal orientation which is tilted away from a <0001>

direction in a <11-20> or <1-100> direction.

4. A nitride compound semiconductor light emitting device according to claim 1, wherein the acceptor doping layer exhibits a p-type conductivity as grown.

5. A nitride compound semiconductor light emitting device according to claim 1, wherein the GaN substrate and the active layer are formed so as to be apart from each other by a distance which is equal to or greater than about 1 μ m.

6. A nitride compound semiconductor light emitting device according to claim 1, wherein the active layer has a quantum well structure, and the active layer has an averaged surface roughness which is equal to or less than a thickness of a well layer in the quantum well structure.

7. A nitride compound semiconductor light emitting device according to claim 1, wherein the active layer includes at least one well layer and at least one barrier layer.

8. A method for producing the nitride compound semiconductor light emitting device according to claim 7,

wherein the method comprises:

after at least one of the at least one well layer and the at least one barrier layer has been formed, observing a wait period during which no other layers are formed, the wait period having a predetermined length.

9. A method according to claim 8, wherein the predetermined length of the wait period is equal to or greater than about 1 second and is equal to or less than about 60 minutes.

10. A method according to claim 8, further comprising:
supplying a carrier gas into a chamber, in which the GaN substrate is placed, during the wait period after at least one of the at least one well layer and the at least one barrier layer has been formed, the carrier gas comprising nitrogen as a main component.

11. A method according to claim 8, further comprising:
supplying a carrier gas and a group V gas into a chamber, in which the GaN substrate is placed, during the wait period after at least one of the at least one well layer and the at least one barrier layer has been formed, the carrier gas comprising nitrogen as a main component.